

To Publish or Not to Publish

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Abstract—A blanket policy against publishing technical papers is as much a mistake as a policy of approving virtually all potential papers for publication. Companies adopting either extreme may be costing themselves money. Accordingly, management must evaluate the merits of each technical paper. Publishing a particular article may enhance a company's stature, but care should be exercised so as not to jeopardize patent position—particularly outside the United States. Guidelines are offered to help management decide between the benefits and the deterrents to publication.

“WE’VE been working on this stuff for the last year-and-a-half and would like to publish our results. You know, Boss, we came up with pretty exciting stuff and it’s time we put it all on paper.”

What is the manager to do? Give the go-ahead, block publication, or buck it upstairs? What factors will help both management and authors to arrive at a decision whether to publish?

For better or worse, in academia the “publish or perish” syndrome is real [1]. In industry the matter of publishing technical papers and larger treatises is more complex. Valid reasons for and against publishing exist. For each case these must be identified and a decision made that is fair to the firm and to the author.

A blanket policy against publication in a given area may disregard benefits that can be achieved by selective publication. Conversely, approving virtually all publications may cost the firm more than it gains. This article identifies the reasons for and against publishing and proposes certain safeguards. I hope this will lead to more rational decisions whether to approve and encourage a given publication.

Are there general reasons for the need for effective communication in science and technology? According to

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Hanson [2], there are many:

- To stimulate thought and action by exchanging ideas, knowledge, experience, and achievements
- To promote continuous awareness of developments in one's own special field and in peripheral fields, as well as in science and technology generally
- To diminish the possibility of reinventing the wheel and thus save time and effort
- To provide introductory and background information for work in unfamiliar fields

TABLE I
REASONS FOR AND AGAINST PUBLICATION

Purposes of publication

Seek validation of theory, method, or data
Trade information via the literature
Aid marketing of a process or product
Promote company's point of view
Block patenting by others
Alert others to a hazard or a safety measure
Build reputation of author and firm
Motivate more thorough/creative work
Retain employees to whom publishing (recognition) is as important as salary

Potential problems

Patent position jeopardized
Know-how lost that is saleable or tradeable
Competitive edge lost
Data released can adversely affect the company without benefiting society
Cost of manuscript preparation too high
Paper is of inadequate scientific quality

Suggested decision-making steps

Rate each purpose listed above as being

- Critical
- Pressing
- Significant
- Not applicable

For each potential problem, consider

- Is it real in fact (not feeling)?
- Can the problem be obviated (prevented or done away with)?

Decide whether the identified benefits outweigh the remaining real problems.

- To provide specific information and data needed for work in hand.

PUBLISHING PROS AND CONS

Let me proceed to the pros and cons of publishing in the industrial situation. A technical publication can serve one or more purposes in a competitive, industrial situation (Table I). Publishing represents a give and take. It encourages others to publish and repays for the information gained from previous publications. It often enhances sale or licensing of the discussed product or process. It blocks others from later patenting the same findings; this protects the right of a firm and its customers to use the findings in cases where a patent is not desired or would be difficult to police. Describing hazards and safeguards discharges a responsibility to society.

Validation

The need to publish is based on the communal nature of science [3]. When an author proposes a theory based on his or her data and those available from the literature, this theory must be tested against other theories. Although new empirical evidence can disprove a theory, it can never fully prove it. But a different theory might more fully explain current and future data. No firm can afford a large number

of experimental checks. So, if we don't stick out our necks in the scientific community, we can go down the primrose path and make a series of errors based on a false or inadequate theory. A classic case of a scientific revolution is the replacement of Newtonian mechanics by relativistic and quantum mechanics. Newton's equations became approximations.

Another reason for validation is the natural tendency for some scientists to feel theirs is the only right explanation. While preparing a recent freshman chemistry text, an author was surprised to learn that supposedly fundamental facts could not be agreed upon [4]. "There is an argument about every fact in the book. It is difficult to get two chemists to agree on the structure of a basic molecule." If this is true of classical information, validation is needed much more for a theory or a method in an emerging technical area.

Compensation

Reputation enhancement may seem self-serving for the author and of no financial benefit for the firm. That's not true. An employee who is widely respected by peers outside the firm is more effective as doors are opened to him or her for beneficial technical discussions with customers, regulatory agencies, and competitors. Opinions are sought and given credence on matters such as reviewing proposed legislation and regulations, awarding research contracts and grants, and providing information to customers on product and process performance. Contacts are developed with others outside the firm with similar interests.

Internally, publications are considered in performance appraisals and salary and promotion reviews and can be used as credentials when applying for membership in professional organizations. Recognition of one's work is one of the most important forms of compensation a company can give!

As more valid, useful articles are published by its employees, a company's reputation is enhanced in dealing with customers and the government. According to R. I. Young of the Badger Company, the firm that fosters a fertile publishing attitude "wants to be seen as a technological leader, a good place to work, a trustworthy source of information, a stable of top-notch talent, and all the good things that inspire confidence and make business easier and more profitable. In addition, it wants its people to get the individual recognition they deserve [5]."

Recruiting also is aided; students of a professor who is impressed by a firm's writings tend to gravitate toward that firm. Badger has set up a technical-article writing committee to develop article ideas and designate authors, to review article ideas proposed by engineers, to approve abstracts, and to review drafts and manuscripts. Editorial help is provided.

Greene has summarized the rewards of publishing from the author's perspective, as well as provided guides to raise an author's chance of getting published [6]. Reasons for

writing are to gain satisfaction, to feel proud that a difficult task was overcome, and to receive praise and recognition from peers. Publications also add to the author's image in the company and increase the chance of special assignment. Article preparation is a learning experience and studies become more accurate and complete.

SUGGESTED SAFEGUARDS AND REVIEWS

We must balance the factors favoring publication with several potential problems (Table I): Patent position especially outside the U.S. may be jeopardized by premature publication; some business data and plans, better held private for a while until problem solutions are developed, may be made public; and it may take too much time to prepare the article in relation to its benefit. These negative factors are formidable indeed; weigh them against the positive factors.

The following items may already be practiced within many firms to a considerable extent. I propose that they need to be carried out more rigorously:

- Using the pro and con lists (Table I) as guides, firms should clearly define the benefits of and deterrents to publication before preparation of a paper is authorized or denied. The benefits and deterrents should be compared and a decision made that management can support and the author can understand.
- Preparation of patent documents on any nontrivial invention encompassed by the study must take precedence

over the technical paper. The paper could follow either after submission of the patent application or after the patent issues, depending on business needs.

- To ensure quality papers, early review by knowledgeable peers should be sought, in addition to later approval reviews by line managers.
- Review of the final paper by business and legal people is vital.

I hope this discussion serves to get more quality papers from industry into the literature.

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